

Application No. 10/716,623

REMARKS

Drawings

It is noted that no Patent Drawing Review (Form PTO-948) was received with the outstanding Office Action. Thus, applicant must assume that the drawings are acceptable as filed.

Claim Objections

Claim 1 is objected to because of the informalities as indicated in the Detailed Action. The examiner has indicated that Claim 1 is allowable over the prior art of record except for formal matters.

Abstract of the Disclosure

Applicant is submitting a substitute Abstract of the Disclosure for that originally filed with application to more clearly describe the claimed invention. Entry of the substitute Abstract of the Disclosure is respectfully requested.

Specification

Applicant is submitting a substitute Specification for that originally filed with application to more clearly describe the claimed invention. Entry of the substitute Specification is respectfully requested. No "new matter" has been added to the original disclosure by the Substitute Specification.

Version with Markings to Show the Changes Made

Attached is a mark-up version of the changes made to the application by the current amendment. The attached document is captioned VERSION WITH

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MARKINGS TO SHOW CHANGES MADE.

Summary

In view of the forgoing amendments and remarks, applicant submits that this application is now in condition for allowance and such action is respectfully requested. If any points remain in issue, please advice by return fax or E-mail as the contact information listed below.

Respectfully submitted,

Date: March 16, 2005

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

BACKGROUND OF THE INVENTION

(a) Field of the Invention

The present invention relates to a turning control structure on a wheel, and more particularly to a structure that enables left and right turning control of ~~makes a wheel swing left and right to control turning.~~

(b) Description of the Prior Art

Wheels on a cart usually have an axis between them that is affixed ~~in the center fixed to the cart, thus, so a user must control turning of the moving cart with his own body posture when the cart is moving, which is very cumbersome, and may result in t.~~ The user ~~may losinge~~ patience, ~~and giving up or lowering his interest in riding the cart, lowering interest in exercise.~~

SUMMARY OF INVENTION

The objectivegoal of the present invention is to provide a turning control structure on a wheel to make direction control easier, convenient,

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and less restrained~~more nimble~~.

The present invention consists of a pair of symmetrical outer shells,
within each of which, ~~Inside the shell is a circular trough in the center,~~
and, ~~Extending from the circular trough are two arched troughs extend~~
from each of the circular troughs. ~~Outside of the shell are~~ Aa plurality of
L-shaped latches are configured on an outer surface of each of the
shells. ~~Place~~ Aa fixing axis with symmetrical protrusions is disposed
between the two outer shells, and, ~~Place a U-shaped spring pins are~~
respectively disposed within ~~in the circular troughs of the outer shells so~~
that the springs pushes against the protrusions. After the shells ~~are~~
placed in the center of a wheel, synchronous sliding of the protrusions
within the arched troughs and elasticity of the spring pins enable the
wheel to swing left and right when in motion, ~~by the synchronous actions~~
of the protrusions within the arched troughs and the spring pin, will swing
left and right when in motion.

The present invention ~~includes~~ has two protective rings, each of
which, ~~The rings have protruding pipes. Latches are configured~~
within each of ~~Inside the protruding pipes to are corresponding latches for~~
to the L-shaped latches on the outer shells. The protective rings are

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respectively ~~to positioned~~ on ~~two~~ both sides of a wheel, and ~~the~~ Rubber rings respectively affixed to ~~around~~ the protective rings protect the outer shells from dirt.

To enable a further understanding of the said objectives and the technological methods of the invention herein, the brief description of the drawings below is followed by the detailed description of the preferred embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows a perspective view of the entire structural ~~assemblycombination~~ according to the present invention.

Fig. 2 shows an an perspective ~~exploded perspective~~ view of the entire structural ~~assemblycombination~~ according to the present invention.

Fig. 3 shows a cross-sectional schematic view of the ~~completely~~ assembled unit according to the present invention.

Fig. 4 shows a schematic view of the present invention in use.

Fig. 5 shows another schematic view of the present invention in use.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figs. 1~3, the present invention comprises ~~consists of~~ two outer shells (1) , within each of which is a circular trough (11) ~~in a~~

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~~center of the outer shell (1) . and two arched troughs (12) e~~Extending
from each of the circular troughs (11) ~~are two arched troughs (12)~~.
~~An~~The outer surface of each of the outer shells (1) assumes a round
shape is round. and On the two sides of each of the outer surface are
defined with L-shaped latches (13) .

A fixing axis (2) is disposed within ~~placed inside~~ the two outer shells
(1) , within which is a . ~~Inside the fixing axis (2) is a~~
lengthwise horizontal hole (21) penetrates the fixing axis (2). ~~Outside~~
~~of the fixing axis (2) has, and p~~protrusions (22) are configured on
outer surfaces of the fixing axis (2). Two U-shaped spring pins (3)
are ~~disposed~~configured in the circular troughs (11) ~~of the outer shells~~
(1) ~~and hold in place the~~ ~~Snap the two outer shells (1) after being~~
snapped together so that the protrusions (22) are disposed within the
arched troughs (12) , thereby enclosing ~~to include the fixing axis (2) so~~
~~that the protrusions (22) are in the arched troughs (12) and held in~~
~~place by the spring pin (3)~~ .

Each of t~~Two~~ protective rings (4) ~~is provided with have a~~ closing
parts (41) ~~and a~~ protruding pipes (42) . A centric hole (43) is defined
in each of t~~The~~ protruding pipes (42) ~~have centric holes (43)~~ , within

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which are configured ~~Inside the centric holes (43)~~ are corresponding
latches_ (44) ~~to correspond to for the L-shaped latches_ (13)~~ on the
outer shells (1) .

When assembling ~~Combining the aforesaid parts,~~ the outer shells
(1) ~~are disposed~~ placed in at the center (51) of a wheel_ (5) , ~~and~~ -
Place the protective rings (4) are respectively disposed on two ends both
sides of the outer shells_ (1) , whereupon ~~and snap together the~~
corresponding latches_ (44) are snapped into and the corresponding
L-shaped latches_ (13) . Place a Rubber rings (6) are then
respectively placed around the closing parts (41) of the protective rings
(4) , thereby rendering the outer shells (1) sealed air-tight from dirt.
When the wheel_ (5) is in motion, the protrusions (22) of the fixing axis
(2) ~~the arched troughs (12)~~ are able to can slide swing around within
the arched troughs (12) ~~the protrusions (22)~~ of the fixing axis while
being and held in place by the spring pins(3) , thereby controlling left and
right turning of ~~so that the wheel (5) moves left and right for turning~~
control.

In conclusion, at the invention, structure of or turning control of a
wheel of the present invention uses , ~~utilizing the outer shells (1) and~~

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with a fixing axis (2) to achieve easy directional control of a wheel.
~~Hence, the present invention provides is of a practical design and
innovative structure invention. The application is in accord with the laws
set forth. Swift review of the application and grant of a patent will be
greatly appreciated.~~

It is of course to be understood that the embodiment described
herein is merely illustrative of the principles of the invention and that a
wide variety of modifications thereto may be effected by persons skilled
in the art without departing from the spirit and scope of the invention as
set forth in the claims.

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IN THE CLAIMS:

What is claimed is:

A structure of turning control on a wheel comprising :

two outer shells, within each of which is defined a circular trough in a center of an outer shell, two arched troughs respectively extend from two on both sides of the circular troughs, an outer surface of each of the outer shells assumes a round shape, a round surface of the outer shell, and L-shaped latches are configured on two both sides of the round surface of each of the outer shellsthe surface;

a fixing axis having a lengthwisehorizontal hole is disposedbeing placed between the two outer shells, and protrusions are configured on the surfaces of the fixing axis;

two U-shaped spring pins that are respectively disposed being placed in the circular troughs of the outer shells, and configured to and pushing against the protrusions on the fixing axis;

two protective rings with closing parts and protruding pipes, each of the protective rings which is defined with has a centric hole, corresponding and latches are configured within inside the centric holes to correspond to the protrusions of the fixing axis;

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two rubber rings that are disposed to be placed around the closing
parts;

and assembled by in combination, snapping the outer shells
together, and disposing placing the outer shell in at the center of a wheel
after snapping the outer shells together, whereafter placing the
protective rings are respectively disposed on twoboth sides of the outer
shells, the arched troughs can swing around the protrusions of the fixing
axis are thus able to slide within the arched troughs, of the fixing axis
and are held in place by the spring pins, thereby enabling left and right
turning control of so that the wheel moves left and right for turning
control.

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IN THE ABSTRACT

ABSTRACT

~~The invention relates to a A structure of turning control on a wheel, and mainly consists of a pair of symmetrical outer shells, within each of which is defined — Inside a shell is a circular trough in the center, and — two arched troughs e~~Extending from each of the circular troughs are two arched troughs. The outside of the shell are Aa plurality of L-shaped latches are configured on an outer surface of each of the shells. Place Aa fixing axis with symmetrical protrusions is disposed between the two outer shells, and — Place a U-shaped spring pins are respectively disposed within the circular troughs of the outer shells so that the spring pins pushes against the protrusions. After the shells are placed in at the center of a wheel, left and right directional control of the wheel is realized, through by the synchronous motion actions of the protrusions within the arched troughs, the protrusions being held in place by and the spring pins, will swing left and right when in motion for direction control.